

Application Serial No. 09/877,768
Amendment dated February 3, 2005
Reply to Notice of Allowance of November 4, 2004

Docket No. 1232-4722

Amendment to the Claims:

Claims (25, 28, 30-37, 51-58), (27, 29, 67, 78, 79), (38, 41, 44, 45, 64, 80, 81), (39, 47-50, 82-84), (40, 42, 85-87) and (88, 89, 90) are pending in this application. Claims 25, 27, 38, 39, 40 and 88 are independent.

The following claim listing replaces all prior versions and listings of claims in this application.

Claim Listing:

1-24 (Cancelled):

25 (Currently Amended): An illumination system comprising:

a secondary light source forming member for forming a plurality of secondary light sources with light from a light source,

wherein an ~~illumination~~ illuminated surface is illuminated with a plurality of light beams from said plurality of secondary light sources, and projection magnifications of a part or all of said plurality of light beams to said illuminated surface are changed, thereby varying an illumination distribution on said illuminated surface, and

wherein said distribution is varied by switching the relationship of the number of overlapping light beams in a central portion of said illuminated surface and the number of overlapping light beams in a peripheral portion of said illuminated surface between different and the same.

26 (Cancelled):

27 (Currently Amended): An illumination system comprising:

a secondary light source forming member for forming a plurality of secondary

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light sources ~~from~~ with light from a light source,

[[,]] wherein ~~an illumination~~ illuminated surface is illuminated with a plurality of light beams from said plurality of secondary light sources, and projection magnifications of a part or all of said plurality of light beams to said illuminated surface are changed, thereby varying an illumination distribution on said illuminated surface, and

wherein the number of overlapping light beams in a central portion of said illuminated surface is structured to be larger than the number of overlapping light beams in a peripheral portion of said illuminated surface, and projection magnifications of said plurality of light beams to said illuminated surface are changed, thereby varying said distribution in an effective region of said illuminated surface.

28 (Original): An illumination system according to claim 25, comprising:

at least one lens array as said secondary light source forming member; and
a light condensing optical element, wherein said distribution is varied by moving said light condensing optical element in a direction of an optical axis.

29 (Original): An illumination system according to claim 27, comprising: at least one lens array as said secondary light source forming member; and a light condensing optical element, wherein said distribution is varied by moving said light condensing optical element in a direction of an optical axis.

30 (Original): An illumination system according to claim 25, comprising:

at least one lens array as said secondary light source forming member; and
a light condensing optical element, wherein said distribution is varied by moving

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at least a part of said at least one lens array.

31 (Original): An illumination system according to claim 30, wherein said distribution is varied by moving at least a part of said at least one lens array in a direction of an optical axis.

32 (Original): An illumination system according to claim 30, wherein said distribution is varied by moving at least a part of said at least one lens array in a direction perpendicular to an optical axis.

33 (Original): An illumination system according to claim 30, wherein said distribution is varied by rotating at least a part of said at least one lens array.

34 (Previously Presented): An illumination system according to claim 25, comprising:
at least one lens array as said secondary light source forming member; and
a light condensing optical element, wherein said distribution is varied by moving at least a part of said at least one lens array.

35 (Original): An illumination system according to claim 34, wherein said distribution is varied by moving at least a part of said at least one lens array in a direction of an optical axis.

36 (Original): An illumination system according to claim 34, wherein said distribution is varied by moving at least a part of said at least one lens array in a direction perpendicular to an optical axis.

37 (Original): An illumination system according to claim 34, wherein said distribution is varied by rotating at least a part of said at least one lens array.

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38 (Previously Presented): An illumination system comprising:

a secondary light source forming member for forming a plurality of secondary light sources by using light from a light source,
at least one lens array as said secondary light source forming member; and
a light condensing optical element,
wherein an illuminated surface is illuminated with a plurality of light beams from said plurality of secondary light sources, and projection magnifications of a part or all of said plurality of light beams to said illuminated surface are changed, thereby varying an illumination distribution in an effective region of said illuminated surface, and
wherein said distribution is varied by moving and rotating at least a part of said at least one lens array.

39 (Currently Amended): An illumination system comprising:

a secondary light source forming member for forming a plurality of secondary light sources by using light from a light source,
wherein an illuminated surface is illuminated with a plurality of light beams from said plurality of secondary light sources, and projection magnifications of a part or all of said plurality of light beams to said illuminated surface are changed, thereby varying an illumination distribution in an effective region of said illuminated surface, and
wherein said distribution is varied by switching the relationship of the number of overlapping light beams in a central portion of ~~said illuminated surface~~ the effective region and the number of overlapping light beams in a peripheral portion of ~~said illuminated surface~~ the

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effective region between different and the same.

40 (Previously Presented): An illumination system comprising:

a secondary light source forming member for forming a plurality of secondary light sources by using light from a light source,

wherein an illuminated surface is illuminated with a plurality of light beams from said plurality of secondary light sources, and projection magnifications of a part or all of said plurality of light beams to said illuminated surface are changed, thereby varying an illumination distribution in an effective region of said illuminated surface, and

wherein the number of overlapping light beams in a central portion of said illuminated surface is structured to be larger than the number of overlapping light beams in a peripheral portion of said illuminated surface, and projection magnifications of said plurality of light beams to said illuminated surface are changed, thereby varying said distribution.

41 (Original): An illumination system according to claim 38, comprising:

at least one lens array as said secondary light source forming member; and

a light condensing optical element, wherein said distribution is varied by moving said light condensing optical element in a direction of an optical axis.

42 (Original): An illumination system according to claim 40, comprising:

at least one lens array as said secondary light source forming member; and

a light condensing optical element, wherein said distribution is varied by moving said light condensing optical element in a direction of an optical axis.

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43 (Cancelled):

44 (Previously Presented): An illumination system according to claim 38, wherein said distribution is varied by moving at least a part of said at least one lens array in a direction of an optical axis.

45 (Previously Presented): An illumination system according to claim 38, wherein said distribution is varied by moving at least a part of said at least one lens array in a direction perpendicular to an optical axis.

46 (Cancelled):

47 (Original): An illumination system according to claim 39, comprising:
at least one lens array as said secondary light source forming member; and
a light condensing optical element, wherein said distribution is varied by moving at least a part of said at least one lens array.

48 (Original): An illumination system according to claim 47, wherein said distribution is varied by moving at least a part of said at least one lens array in a direction of an optical axis.

49 (Original): An illumination system according to claim 47, wherein said distribution is varied by moving at least a part of said at least one lens array in a direction perpendicular to an optical axis.

50 (Original): An illumination system according to claim 47, wherein said distribution is varied by rotating at least a part of said at least one lens array.

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51 (Previously Presented): An image display apparatus comprising:

at least one image forming element; and

an illumination system according to claim 25 for illuminating said at least one image forming element with light from a light source.

52 (Original): An apparatus according to claim 51, further comprising:

a projection optical system for projecting an image formed by said image forming element on a projection surface, wherein said apparatus further comprises a plurality of image forming elements and said projection optical system overlappingly projects on said projection surface images formed by said plurality of image forming elements.

53 (Previously Presented): An apparatus according to claim 51, wherein said apparatus comprises a plurality of image forming elements at least for red, green, and blue, respectively and said apparatus further comprises a plurality of dichroic mirrors for combining colors from said plurality of image forming elements.

54 (Previously Presented): An apparatus according to claim 51, wherein said apparatus comprises a plurality of image forming elements at least for red, green, and blue, respectively and said apparatus further comprises a plurality of dichroic prisms for combining colors from said plurality of image forming elements.

55 (Previously Presented): An illumination system according to claim 25,

wherein an image recording apparatus for supplying an image signal to said apparatus.

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56 (Previously Presented): An illumination system according to claim 25,
wherein a computer for supplying an image signal to said apparatus.

57 (Previously Presented): An apparatus according to claim 51, further comprising a
projection optical system for projecting an image formed by said image forming element on a
projection surface, wherein said apparatus has a single image forming element and said
projection optical system projects the image formed by said single image forming element on the
projection surface.

58 (Original): An apparatus according to claim 51 further comprising a projection optical system
for projecting an image formed by said image forming element on a projection surface, wherein
said apparatus has a single image forming element and said projection optical system projects the
image formed by said single image forming element on the projection surface.

59-63 (Cancelled):

64 (Previously Presented): An image apparatus comprising:
at least one image forming element; and
an illumination system according to claim 38 for illuminating said at least one
image forming element with light from a light source.

65-66 (Cancelled):

67 (Previously Presented): An image display apparatus comprising:
at least one image forming element; and

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an illumination system according to claim 27 for illuminating said at least one image forming element with light from a light source.

68-77 (Cancelled):

78 (Previously Presented): An image display apparatus accoring to claim 67, further comprising an image storing apparatus for supplying image signal to said image display apparatus.

79 (Previously Presented): An image display apparatus accoring to claim 67, further comprising a computer for supplying image signal to said image display apparatus.

80 (Previously Presented): An image apparatus accoring to claim 64, further comprising an image storing apparatus for supplying image signal to said image display apparatus.

81 (Previously Presented): An image apparatus accoring to claim 64, further comprising a computer for supplying image signal to said image display apparatus.

82 (Previously Presented): An image apparatus comprising:
at least one image forming element; and
an illumination system according to claim 39 for illuminating said at least one image forming element with light from a light source.

83 (Previously Presented): An image display apparatus accoring to claim 82, further comprising an image storing apparatus for supplying image signal to said image display apparatus.

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84 (Previously Presented): An image display apparatus accoring to claim 82, further comprising a computer for supplying image signal to said image display apparatus.

85 (Previously Presented): An image apparatus comprising:
at least one image forming element; and
an illumination system according to claim 40 for illuminating said at least one image forming element with light from a light source.

86 (Previously Presented): An image display apparatus accoring to claim 85, further comprising an image storing apparatus for supplying image signal to said image display apparatus.

87 (Previously Presented): An image display apparatus accoring to claim 85, further comprising a computer for supplying image signal to said image display apparatus.

88 (Previously Presented): An image display apparatus comprising:
at least one image forming element for forming an image in an effective region;
and
a secondary light source forming member for forming a plurality of secodary light source with light from a light source,
wherein said at least one image forming element is illuminated by using
a plurality of light beam from a light source, and projection magnifications of a part or all of said plurality of light beams to said at least one image forming element are changed, whereby, in a case that images formed by said at least one image forming element concentrate at a central part

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rather than a peripheral part of the effective region, an image display apparatus controls a brightness of the central part to be brighter than that of a peripheral part, or in a case that images formed by said at least one image forming element are dispersed at a central part and a peripheral part, an image display apparatus controls a brightness of the central part to be substantially equal to that of a peripheral part of the effective region.

89 (Previously Presented): An image display apparatus according to claim 88, further comprising an image storing apparatus for supplying image signal to said image display apparatus.

90 (Previously Presented): An image display apparatus according to claim 88, further comprising a computer for supplying image signal to said image display apparatus.

91 (New): An illumination optical system for illuminating a surface to be illuminated with light from a light source, comprising a switch means capable of switching between a mode in which the surface to be illuminated is uniformly illuminated and another mode in which an illuminance at a center part of the surface to be illuminated is higher than an illuminance at peripheral parts of the surface to be illuminated.

92 (New): An illumination optical system according to claim 91, wherein said switch means is capable of switching between a mode in which an effective region in the surface to be illuminated is uniformly illuminated and another mode in which an illuminance at a center part of the effective region in the surface to be illuminated is higher than illuminance at peripheral parts of the effective region.

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93 (New): An image display apparatus, comprising:

- an image forming element;
- an illumination optical system for illuminating said image forming element with light from a light source; and
- a switch means capable of switching between a mode in which said image forming element is uniformly illuminated and another mode in which an illuminance at a center part of said image forming element is higher than an illuminance at peripheral portions of said image forming element.

94 (New): An illumination optical system according to claim 93, wherein said switch means is capable of switching between a mode in which an effective region in said image forming element is uniformly illuminated and another mode in which an illuminance at a center part of the effective region in said image forming element is higher than illuminance at peripheral parts of the effective region of said image forming element.